

IN THE CLAIMS

The following claim set replaces all prior versions, and listings, of claims in the application:

Claims 1 through 5 – withdrawn, cancelled.

B 6. (Currently Amended) A method of producing carbon black ~~producing~~ apparatus according to Claim ~~1~~ 30, wherein the shape of the oxygen-containing gas feed port is non-circular, and the opening diameter (DL) of the oxygen-containing gas feed port and the shortest distance (Dw) between the oxygen-containing gas feed port and the inner wall of the reactor have a relation of $Dw < 1.5DL$.

7. (Currently Amended) A method of producing carbon black ~~producing~~ apparatus according to Claim ~~1~~ 30, wherein the distance from the crossing point of the center line of the fuel flow supplied from the fuel feed port and the center line of the oxygen-containing gas flow supplied from the oxygen-containing gas feed port to the end of the oxygen-containing gas feed port is not less than twice the opening diameter of the oxygen-containing gas feed port.

8. Cancelled

B 9. (Currently Amended) A method of producing carbon black according to claim 8 30, wherein the oxygen-containing gas flow rate is not less than 55 m/s.

10. (Currently Amended) A method of producing carbon black according to Claim 8 30, wherein the average temperature of the first reaction zone is not lower than 1,600°C.

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11. (Currently Amended) A method of producing carbon black according to Claim 8, 30 wherein the combustion gas flow temperature in the ~~vicinity of the feedstock~~ hydrocarbon feed port second reaction zone is not lower than 1,600°C.

12. (Currently Amended) A method of producing carbon black according to Claim 8 30, wherein the oxygen concentration in the ~~vicinity of the feedstock~~ hydrocarbon feed port second reaction zone is not more than 3%.

Claims 13-21 cancelled

Claims 22-29 withdrawn, cancelled.

30. (New) A method of producing carbon black comprising continuously supplying to a first reaction zone an oxygen-containing gas through at least one feed port and fuel through at least one feed port and burning them to form a combustion flow,

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passing the combustion flow to a second reaction zone disposed downstream of the first reaction zone, supplying feedstock hydrocarbon to the gas flow through one or more feed ports and reacting the hydrocarbon to produce carbon black, and

passing the gas flow from the second reaction zone to a third reaction zone disposed downstream of the second reaction zone and stopping the reaction of the hydrocarbon and combustion gas,

wherein, in the first reaction zone, the oxygen-containing gas and the fuel are supplied independently of each other into the first reaction zone by a fuel feed port and a circular or non-circular oxygen-containing gas feed port which feed ports are independently spaced apart from each other and open into the reaction zone from the same direction.

B 31. (New) A method of producing carbon black according to claim 30, wherein combustion flow in the second reaction zone is controlled by a choke in the second reaction zone.

32. (New) A method of producing carbon black according to claim 30, wherein additional fuel feed ports are provided in each of the oxygen-containing gas feed ports.
